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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,960	08/22/2003	Shifang Li	OPL-130	8413
30869	7590	04/27/2005	EXAMINER	
LUMEN INTELLECTUAL PROPERTY SERVICES, INC. 2345 YALE STREET, 2ND FLOOR PALO ALTO, CA 94306			ROJAS, OMAR R	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/645,960

Applicant(s)

LI ET AL.

Examiner

Omar Rojas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0803.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Detailed Action.

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by applicant in the Information Disclosure Statement(s) filed on August 22, 2003 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Claim Objections

2. Claim 1 is objected to because of the following informalities: Claim 1 recites the limitation "the sequence." This limitation lacks a clear antecedent basis in the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 3 recites the limitation "a light ray entering the Wollaston prism... is split by the Wollaston prism into two diverging light rays... have angles of at least 3 degrees relative to the device optical axis" in the claim. There is insufficient antecedent basis for this limitation in the claim.

5. Because the scope of claim 3 is uncertain, it has not been examined for patentability purposes.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 1, 2, and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. 6,795,245 to Xiao (hereinafter "Xiao) in view of Patent No. 6,707,960 to Li et al (hereinafter "Li").**

Regarding claims 1, 2, and 4, Xiao teaches an optical switch device **500** comprising a plurality of optical elements mutually aligned along a common device optical axis in sequence, wherein the sequence comprises:

multiple optical ports comprising first, second, and third optical ports (**1',1,2'**),

a collimating lens **501** signals associated with at least one of the multiple optical ports so that an optical signal will pass through the collimating lens,

a birefringent crystal **501**,

a halfwave plate pair (**503, 508**),

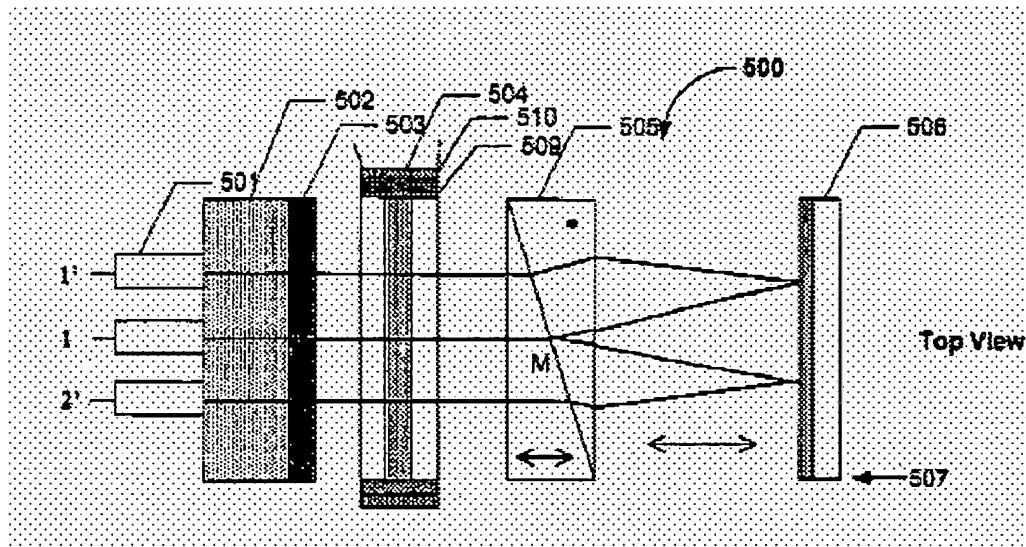
a switchable Faraday rotator **504**,

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a Wollaston prism 505, and

a mirror 506;

wherein the switchable Faraday rotator 504 selectively switches the device between a first state and a second state, wherein the first state couples light between the first port and the second port, and the second state does not couple light between the first port and the second port (see Xiao at column 4, lines 58-61). Part of Figure 5 of Xiao is reproduced below.

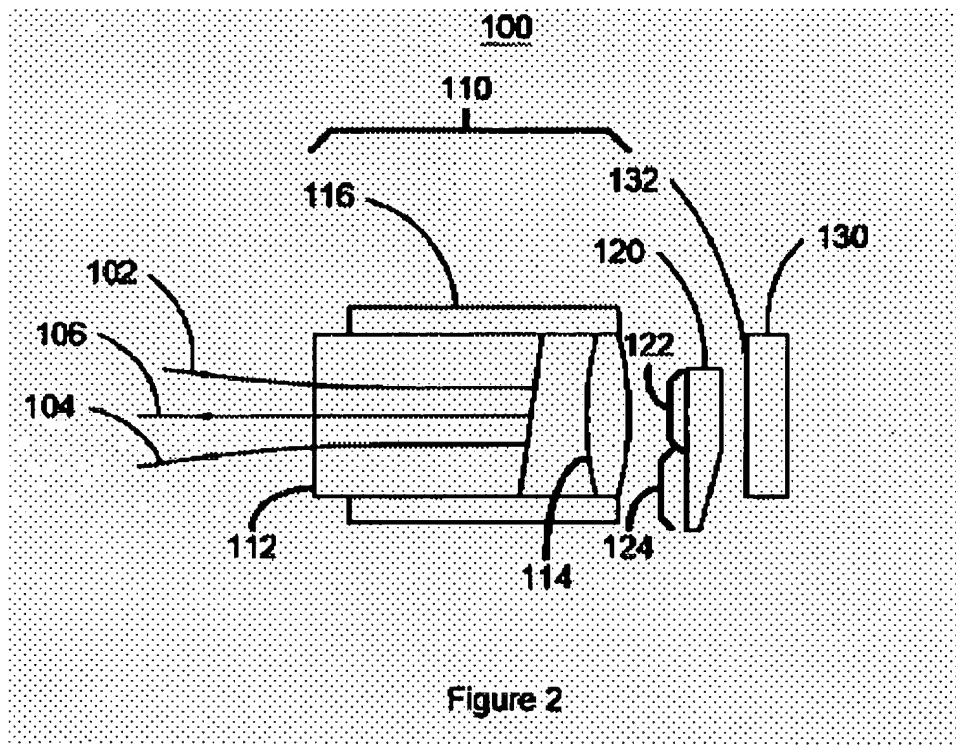


Regarding claims 5 and 6, see the previous remarks, Figure 6 of Xiao, and column 4, lines 18-37.

Thus, Xiao only differs from claims 1, 2, and 4-6, in that Xiao does not teach using a multiple-fiber pigtail and a single collimating lens such that optical signals associated with the multiple optical ports will all pass through the same collimating lens.

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Li, on the other hand, teaches an optical switch device using a multiple-fiber pigtail 112 and a single collimating lens 114 such that optical signals associated with multiple optical ports will all pass through the same collimating lens 114. See Figure 2 of Li, reproduced below.



The suggestion for combining Li with Xiao is given by Li in column 5, lines 9-12 (“fewer and lower cost optical components”).

Therefore, claims 1, 2, and 4-6 are obvious in view of Xiao combined with Li.

Allowable Subject Matter

9. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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10. The following is a statement of reasons for the indication of allowable subject matter:

Although Xiao discloses other embodiments teaching a Faraday rotator that rotates the polarization of light passing through it by 90 degrees (e.g., see Xiao at column 9, lines 6-10), it is not considered obvious to use a 90 degree angle of rotation in the embodiment of Figure 5.

Applicant(s) appear to disclose a perceived criticality for this feature on page 4, lines 17-23 of the specification. Therefore, the subject matter of claim 7 is deemed allowable absent further evidence to the contrary.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (703) 872-9306. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Omar Rojas
Patent Examiner
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or
April 25, 2005